

CLAIMS:

1. A method of controlling a plural-mode receiver, capable of receiving signals from a first communication or signals from a second, different communication system, to reduce frequency errors associated with the receiver scanning for signals of the second communication system while receiving signals of the first communication system, the method comprising:

changing parameters of a reference oscillator of the receiver so that the oscillator oscillates at frequencies related to signals of the second communication system;

recording the change in frequency of the oscillator resulting from the adjustment;

receiving signals of the second communication system for a period of time; recording the period of time;

calculating from the recorded change and the recorded period of time an error vector; and

changing parameters of the reference oscillator, including applying the calculated error vector, so that the oscillator oscillates at frequencies related to signals of the first communication system.

2. A method as claimed in claim 1, further comprising:

receiving data relating to the frequencies of signals of the second communication system;

determining from the received data the parameters of the reference oscillator to cause the same to oscillate at approximately the frequencies related to signals of the second communication system.

3. A method as claimed in claim 2, further comprising:

receiving further data relating to the frequencies of signals second communication system;

determining from the received data corrections to be applied to the parameters of the reference oscillator to cause the same to oscillate at substantially the frequencies related to signals of the second communication system.

4. A method as claimed in claim 3, wherein the recorded change in frequency includes the change associated with oscillating at approximately the frequencies related to signals of the second communication system and the change associated with oscillating at substantially the frequencies related to signals of the second communication system.

5. A method as claimed in claim 3 or 4, wherein the period of time comprises both time spent oscillating at approximately the frequencies related to signals of the second communication system and time spent oscillating at substantially the frequencies related to signals of the second communication system.

6. A method as claimed in any preceding claim, further comprising receiving signals of the second communication system containing information pertaining to the second system.

7. A method as claimed in any preceding claim, wherein the scanning is effected while the receiver is in an idle mode.

8. A plural-mode receiver apparatus for receiving signals from a first communication or signals from a second, different communication system, the apparatus comprising:

a first receiver chain for receiving signals of the first communication system;
a second receiver chain for receiving signals of the second communication system;

a reference oscillator for generating a reference signal for the first receiver chain and the second receiver chain; and a controller for:

changing parameters of the reference oscillator so that the oscillator oscillates at frequencies related to signals of the second communication system;

recording the change in frequency of the oscillator resulting from the adjustment;

recording a period of time during which signals of the second communication system are received by the second receiver chain;

calculating from the recorded change and the recorded period of time an error vector; and

changing parameters of the reference oscillator, including applying the calculated error vector, so that the oscillator oscillates at frequencies related to signals of the first communication system.

9. An apparatus as claimed in claim 8, further comprising means for receiving data relating to the frequencies of signals of the second communication system and wherein the controller is arranged to determine from the received data the parameters of the reference oscillator to cause the same to oscillate at approximately the frequencies related to signals of the second communication system.

10. An apparatus as claimed in claim 9, further comprising means for receiving further data relating to the frequencies of signals second communication system, and wherein the controller is arranged to determine from the received data corrections to be applied to the parameters of the reference oscillator to cause the same to oscillate at substantially the frequencies related to signals of the second communication system.

11. An apparatus as claimed in claim 10, wherein controller is arranged to record changes in frequency that include the change associated with oscillating at approximately the frequencies related to signals of the second communication system and the change associated with oscillating at substantially the frequencies related to signals of the second communication system.

12. An apparatus as claimed in claim 10 or 11, wherein controller is arranged to calculate the period of time from both time spent oscillating at approximately the frequencies related to signals of the second communication system

and time spent oscillating at substantially the frequencies related to signals of the second communication system.

13. An apparatus as claimed in any of claims 8 to 12, wherein the controller is operable while the receiver is in an idle mode.

14. A receiver for receiving signals of a first communication system and signals of a second communication system, the receiver comprising a receiving circuit tunable to receive signals of the first and second communication systems, the receiver being arranged so that, while tuned to receive signals of the first communication system, the receiving circuit can be briefly retuned to receive signals of the second communication system before being tuned back to receive again signals of the first communication system, and so that a correction is made when tuning back to signals of the first communication system depending on tuning changes made while retuning and receiving signals of the second communication system and the duration of the changes.

15. A receiver as claimed in claim 14, wherein the receiving circuit comprises a first receiver chain operable to receive signals from a first communications system and a second receiver chain operable to receive signals from a second communications system.

16. A receiver as claimed in claim 15, further comprising a phase-locked loop circuit associated with the first receiver chain and with the second receiver chain.

17. A receiver as claimed in claim 16, wherein the phase-locked loop circuit comprises a single phase-locked loop configurable to output a signal at a first frequency related with signals of the first communications system or to output a signal at a second frequency related with signals of the second communications system.

18. A receiver as claimed in claim 16 or 17, wherein the phase-locked loop circuit comprises a voltage-controlled temperature-compensated crystal oscillator (VCTCXO) to which the correction is made.

19. A receiver as claimed in any of claims 15 to 18, wherein the first receiver chain is configured to receive signals of a continuous frequency division duplex system.

20. A receiver as claimed in any of claims 15 to 19, wherein the second receiver chain is configured to receive signals of a time division duplex system.

21. A receiver as claimed in claim 19, wherein the first receiver chain is configured to receive WCDMA signals.

22. A receiver as claimed in claim 20, wherein the second receiver chain is configured to receive GSM signals.

23. A receiver as claimed in any of claims 15 to 22, further comprising a controller for controlling the receiver circuit to cause the same to tune between the signals of the first and second communication systems.

24. A receiver as claimed in claim 23, wherein the controller is operable to calculate the correction from the tuning changes made while retuning and receiving signals of the second communication system and the duration of the changes and to apply the correction to the receiver circuit.

25. A method of receiving signals of a first communication system and signals of a second communication system, the method comprising tuning a receiving circuit to receive signals of the first communication system, retuning the receiver circuit to receive signals of the second communication system, tuning the receiver back to receive again signals of the first communication system, determining tuning changes made while retuning and receiving signals of the second communication system and the duration of the changes, calculating from the changes and duration of the changes a correction to be made to the tuning, and making the calculated correction when tuning back to signals of the first communication system.

26. An apparatus or method substantially as described herein with reference to the accompanying drawings.